

SEQUENCE LISTING

<110> Katherine Galvin and Laura A. Rudolph-Owen

<120> METHODS AND COMPOSITIONS FOR THE DIAGNOSIS  
AND TREATMENT OF CARDIOVASCULAR AND TUMORIGENIC  
DISEASE USING 4941

<130> MPI99-283P1RCN1M

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<150> 09/635,521  
<151> 2000-08-09

<150> 60/199,908  
<151> 2000-04-26

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<170> PatentIn Ver. 2.0

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cac agt cat gtc ccc gag ttt gag gtg gcc acc tgg atc aaa atc acc 96  
His Ser His Val Pro Glu Phe Glu Val Ala Thr Trp Ile Lys Ile Thr  
20 . . . . . 25 . . . . . 30 . . . . .

ctt att ctg gtg tac ctg atc atc ttc gtg atg ggc ctt ctg ggg aac 144  
Leu Ile Leu Val Tyr Leu Ile Ile Phe Val Met Gly Leu Leu Gly Asn  
35 . . . . . 40 . . . . . 45 . . . . .

agc gcc acc att cgg gtc acc cag gtg ctg cag aag aaa gga tac ttg 192  
Ser Ala Thr Ile Arg Val Thr Gln Val Leu Gln Lys Lys Gly Tyr Leu  
50 . . . . . 55 . . . . . 60 . . . . .

cag aag gag gtg aca gac cac atg gtg agt ttg gct tgc tcg gac atc 240  
Gln Lys Glu Val Thr Asp His Met Val Ser Leu Ala Cys Ser Asp Ile  
65 . . . . . 70 . . . . . 75 . . . . . 80 . . . . .

ttg gtg ttc ctc atc ggc atg ccc atg gag ttc tac agc atc atc tgg 288  
Leu Val Phe Leu Ile Gly Met Pro Met Glu Phe Tyr Ser Ile Ile Trp  
85 . . . . . 90 . . . . . 95 . . . . .

aat ccc ctg acc acg tcc agc tac acc ctg tcc tgc aag ctg cac act 336  
Asn Pro Leu Thr Thr Ser Ser Tyr Thr Leu Ser Cys Lys Leu His Thr  
100 . . . . . 105 . . . . . 110 . . . . .

ttc ctc ttc gag gcc tgc agc tac gct acg ctg ctg cac gtg ctg aca 384

Phe	Leu	Phe	Glu	Ala	Cys	Ser	Tyr	Ala	Thr	Leu	Leu	His	Val	Leu	Thr	
115																
120															125	
ctc	agc	ttt	gag	cgc	tac	atc	gcc	atc	tgt	cac	ccc	ttc	agg	tac	aag	432
Leu	Ser	Phe	Glu	Arg	Tyr	Ile	Ala	Ile	Cys	His	Pro	Phe	Arg	Tyr	Lys	
130																135
																140
gct	gtg	tcg	gga	cct	tgc	cag	gtg	aag	ctg	ctg	att	ggc	ttc	gtc	tgg	480
Ala	Val	Ser	Gly	Pro	Cys	Gln	Val	Lys	Leu	Leu	Ile	Gly	Phe	Val	Trp	
145																150
																155
gtc	acc	tcc	gcc	ctg	gtg	gca	ctg	ccc	ttg	ctg	ttt	gcc	atg	ggt	act	528
Val	Thr	Ser	Ala	Leu	Val	Ala	Leu	Pro	Leu	Leu	Phe	Ala	Met	Gly	Thr	
165																170
																175
gag	tac	ccc	ctg	gtg	aac	gtg	ccc	agc	cac	cgg	ggt	ctc	act	tgc	aac	576
Glu	Tyr	Pro	Leu	Val	Asn	Val	Pro	Ser	His	Arg	Gly	Leu	Thr	Cys	Asn	
180																185
																190
cgc	tcc	agc	acc	cgc	cac	cac	gag	cag	ccc	gag	acc	tcc	aat	atg	tcc	624
Arg	Ser	Ser	Thr	Arg	His	His	Glu	Gln	Pro	Glu	Thr	Ser	Asn	Met	Ser	
195																200
																205
atc	tgt	acc	aac	ctc	tcc	agc	cgc	tgg	acc	gtg	ttc	cag	tcc	agc	atc	672
Ile	Cys	Thr	Asn	Leu	Ser	Ser	Arg	Trp	Thr	Val	Phe	Gln	Ser	Ser	Ile	
210																215
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ttc	ggc	gcc	ttc	gtg	gtc	tac	ctc	gtg	gtc	ctg	ctc	tcc	gta	gcc	ttc	720
Phe	Gly	Ala	Phe	Val	Val	Tyr	Leu	Val	Val	Leu	Leu	Ser	Val	Ala	Phe	
225																230
																235
atg	tgc	tgg	aaa	atg	atg	cag	gtg	ctc	atg	aaa	agc	cag	aag	ggc	tgc	768
Met	Cys	Trp	Asn	Met	Met	Gln	Val	Leu	Met	Lys	Ser	Gln	Lys	Gly	Ser	
245																250
																255
ctg	gcc	ggg	ggc	acg	cgg	cct	ccg	cag	ctg	agg	aag	tcc	gag	agc	gaa	816
Leu	Ala	Gly	Gly	Thr	Arg	Pro	Pro	Gln	Leu	Arg	Lys	Ser	Glu	Ser	Glu	
260																265
																270
gag	agc	agg	acc	gcc	agg	agg	cag	acc	atc	atc	ttc	ctg	agg	ctg	att	864
Glu	Ser	Arg	Thr	Ala	Arg	Arg	Gln	Thr	Ile	Ile	Phe	Leu	Arg	Leu	Ile	
275																280
																285
gtt	gtg	aca	ttg	gcc	gta	tgc	tgg	atg	ccc	aac	cag	att	cgg	agg	atc	912
Val	Val	Thr	Leu	Ala	Val	Cys	Trp	Met	Pro	Asn	Gln	Ile	Arg	Arg	Ile	
290																295
																300
atg	gct	gcf	gcc	aaa	ccc	aag	cac	gac	tgg	acg	agg	tcc	tac	ttc	cgf	960
Met	Ala	Ala	Ala	Lys	Pro	Lys	His	Asp	Trp	Thr	Arg	Ser	Tyr	Phe	Arg	
305																310
																315
gcg	tac	atg	atc	ctc	ctc	ccc	ttc	tgc	gag	acg	ttt	ttc	tac	ctc	agc	1008
Ala	Tyr	Met	Ile	Leu	Leu	Pro	Phe	Ser	Glu	Thr	Phe	Phe	Tyr	Leu	Ser	
325																330
																335
tcg	gtc	atc	aac	ccg	ctc	ctg	tac	acg	gtg	tcc	tgc	cag	cag	ttt	cgf	1056
Ser	Val	Ile	Asn	Pro	Leu	Leu	Tyr	Thr	Val	Ser	Ser	Gln	Gln	Phe	Arg	
340																345
																350
cgf	gtg	ttc	gtg	cag	gtg	ctg	tgc	cgf	ctg	ctg	ctg	cag	cac	gcc	1104	
Arg	Val	Phe	Val	Gln	Val	Leu	Cys	Cys	Arg	Leu	Ser	Leu	Gln	His	Ala	
355																360
																365

aac cac gag aag cgc ctg cgc gta cat gcg cac tcc acc acc gac agc Asn His Glu Lys Arg Leu Arg Val His Ala His Ser Thr Thr Asp Ser 370 375 380	1152
gcc cgc ttt gtg cag cgc ccg ttg ctc ttc gcg tcc cg <sup>g</sup> cgc cag tcc Ala Arg Phe Val Gln Arg Pro Leu Leu Phe Ala Ser Arg Arg Gln Ser 385 390 395 400	1200
tct gca agg aga act gag aag att ttc tta agc act ttt cag agc gag Ser Ala Arg Arg Thr Glu Lys Ile Phe Leu Ser Thr Phe Gln Ser Glu 405 410 415	1248
gcc gag ccc cag tct aag tcc cag tca ttg agt ctc gag tca cta gag Ala Glu Pro Gln Ser Lys Ser Gln Ser Leu Ser Leu Glu Ser Leu Glu 420 425 430	1296
ccc aac tca ggc gcg aaa cca gcc aat tct gct gca gag aat ggt ttt Pro Asn Ser Gly Ala Lys Pro Ala Asn Ser Ala Ala Glu Asn Gly Phe 435 440 445	1344
cag gag cat gaa gtt tga Gln Glu His Glu Val 450	1362

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Leu Ile Leu Val Tyr Leu Ile Ile Phe Val Met Gly Leu Leu Gly Asn  
35 40 45

Ser Ala Thr Ile Arg Val Thr Gln Val Leu Gln Lys Lys Gly Tyr Leu  
50 55 60

Gln Lys Glu Val Thr Asp His Met Val Ser Leu Ala Cys Ser Asp Ile  
65 70 75 80

Leu Val Phe Leu Ile Gly Met Pro Met Glu Phe Tyr Ser Ile Ile Trp  
85 90 95

Asn Pro Leu Thr Thr Ser Ser Tyr Thr Leu Ser Cys Lys Leu His Thr  
100 105 110

Phe Leu Phe Glu Ala Cys Ser Tyr Ala Thr Leu Leu His Val Leu Thr  
115 120 125

Leu Ser Phe Glu Arg Tyr Ile Ala Ile Cys His Pro Phe Arg Tyr Lys  
130 135 140

Ala Val Ser Gly Pro Cys Gln Val Lys Leu Leu Ile Gly Phe Val Trp  
145 150 155 160

Val Thr Ser Ala Leu Val Ala Leu Pro Leu Leu Phe Ala Met Gly Thr  
                  165                         170                         175  
  
 Glu Tyr Pro Leu Val Asn Val Pro Ser His Arg Gly Leu Thr Cys Asn  
                  180                         185                         190  
  
 Arg Ser Ser Thr Arg His His Glu Gln Pro Glu Thr Ser Asn Met Ser  
                  195                         200                         205  
  
 Ile Cys Thr Asn Leu Ser Ser Arg Trp Thr Val Phe Gln Ser Ser Ile  
                  210                         215                         220  
  
 Phe Gly Ala Phe Val Val Tyr Leu Val Val Leu Leu Ser Val Ala Phe  
                  225                         230                         235                         240  
  
 Met Cys Trp Asn Met Met Gln Val Leu Met Lys Ser Gln Lys Gly Ser  
                  245                         250                         255  
  
 Leu Ala Gly Gly Thr Arg Pro Pro Gln Leu Arg Lys Ser Glu Ser Glu  
                  260                         265                         270  
  
 Glu Ser Arg Thr Ala Arg Arg Gln Thr Ile Ile Phe Leu Arg Leu Ile  
                  275                         280                         285  
  
 Val Val Thr Leu Ala Val Cys Trp Met Pro Asn Gln Ile Arg Arg Ile  
                  290                         295                         300  
  
 Met Ala Ala Ala Lys Pro Lys His Asp Trp Thr Arg Ser Tyr Phe Arg  
                  305                         310                         315                         320  
  
 Ala Tyr Met Ile Leu Leu Pro Phe Ser Glu Thr Phe Phe Tyr Leu Ser  
                  325                         330                         335  
  
 Ser Val Ile Asn Pro Leu Leu Tyr Thr Val Ser Ser Gln Gln Phe Arg  
                  340                         345                         350  
  
 Arg Val Phe Val Gln Val Leu Cys Cys Arg Leu Ser Leu Gln His Ala  
                  355                         360                         365  
  
 Asn His Glu Lys Arg Leu Arg Val His Ala His Ser Thr Thr Asp Ser  
                  370                         375                         380  
  
 Ala Arg Phe Val Gln Arg Pro Leu Leu Phe Ala Ser Arg Arg Gln Ser  
                  385                         390                         395                         400  
  
 Ser Ala Arg Arg Thr Glu Lys Ile Phe Leu Ser Thr Phe Gln Ser Glu  
                  405                         410                         415  
  
 Ala Glu Pro Gln Ser Lys Ser Gln Ser Leu Ser Leu Glu Ser Leu Glu  
                  420                         425                         430  
  
 Pro Asn Ser Gly Ala Lys Pro Ala Asn Ser Ala Ala Glu Asn Gly Phe  
                  435                         440                         445  
  
 Gln Glu His Glu Val  
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<222> (42)..(1400)

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<223> N at positions 2490 and 2493 may be Adenine,  
Guanine, Cytosine or Thymine

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Met Ala Ser Pro Ser  
1 5

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Leu Pro Gly Ser Asp Cys Ser Gln Ile Ile Asp His Ser His Val Pro  
10 15 20

gag ttt gag gtg gcc acc tgg atc aaa atc acc ctt att ctg gtg tac 152  
Glu Phe Glu Val Ala Thr Trp Ile Lys Ile Thr Leu Ile Leu Val Tyr  
25 30 35

ctg atc atc ttc gtg atg ggc ctt ctg ggg aac agc gcc acc att cg 200  
Leu Ile Ile Phe Val Met Gly Leu Leu Gly Asn Ser Ala Thr Ile Arg  
40 45 50

gtc acc cag gtg ctg cag aag aaa gga tac ttg cag aag gag gtg aca 248  
Val Thr Gln Val Leu Gln Lys Lys Gly Tyr Leu Gln Lys Glu Val Thr  
55 60 65

gac cac atg gtg agt ttg gct tgc gac atc ttg gtg ttc ctc atc 296  
Asp His Met Val Ser Leu Ala Cys Ser Asp Ile Leu Val Phe Leu Ile  
70 75 80 85

ggc atg ccc atg gag ttc tac agc atc atc tgg aat ccc ctg acc acg 344  
Gly Met Pro Met Glu Phe Tyr Ser Ile Ile Trp Asn Pro Leu Thr Thr  
90 95 100

tcc agc tac acc ctg tcc tgc aag ctg cac act ttc ctc ttc gag gcc 392  
Ser Ser Tyr Thr Leu Ser Cys Lys Leu His Thr Phe Leu Phe Glu Ala  
105 110 115

tgc agc tac gct acg ctg ctg cac gtg ctg aca ctc agc ttt gag cgc 440  
Cys Ser Tyr Ala Thr Leu Leu His Val Leu Thr Leu Ser Phe Glu Arg  
120 125 130

tac atc gcc atc tgt cac ccc ttc agg tac aag gct gtg tcg gga cct 488  
Tyr Ile Ala Ile Cys His Pro Phe Arg Tyr Lys Ala Val Ser Gly Pro  
135 140 145

tgc cag gtg aag ctg ctg att ggc ttc gtc tgg gtc acc tcc gcc ctg 536  
Cys Gln Val Lys Leu Leu Ile Gly Phe Val Trp Val Thr Ser Ala Leu  
150 155 160 165

gtg gca ctg ccc ttg ctg ttt gcc atg ggt act gag tac ccc ctg gtg 584  
Val Ala Leu Pro Leu Leu Phe Ala Met Gly Thr Glu Tyr Pro Leu Val  
170 175 180

aac gtg ccc agc cac cgg ggt ctc act tgc aac cgc tcc agc acc cgc 632  
Asn Val Pro Ser His Arg Gly Leu Thr Cys Asn Arg Ser Ser Thr Arg  
185 190 195

cac cac gag cag ccc gag acc tcc aat atg tcc atc tgt acc aac ctc		680	
His His Glu Gln Pro Glu Thr Ser Asn Met Ser Ile Cys Thr Asn Leu			
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tcc agc cgc tgg acc gtg ttc cag tcc agc atc ttc ggc gcc ttc gtg		728	
Ser Ser Arg Trp Thr Val Phe Gln Ser Ser Ile Phe Gly Ala Phe Val			
215	220	225	
gtc tac ctc gtg gtc ctg ctc tcc gta gcc ttc atg tgc tgg aac atg		776	
Val Tyr Leu Val Val Leu Leu Ser Val Ala Phe Met Cys Trp Asn Met			
230	235	240	245
atg cag gtg ctc atg aaa agc cag aag ggc tcg ctg gcc ggg ggc acg		824	
Met Gln Val Leu Met Lys Ser Gln Lys Gly Ser Leu Ala Gly Gly Thr			
250	255	260	
cgg cct ccg cag ctg agg aag tcc gag agc gaa gag agc agg acc gcc		872	
Arg Pro Pro Gln Leu Arg Lys Ser Glu Ser Glu Ser Arg Thr Ala			
265	270	275	
agg agg cag acc atc atc ttc ctg agg ctg att gtt gtg aca ttg gcc		920	
Arg Arg Gln Thr Ile Ile Phe Leu Arg Leu Ile Val Val Thr Leu Ala			
280	285	290	
gta tgc tgg atg ccc aac cag att cgg agg atc atg gct gcg gcc aaa		968	
Val Cys Trp Met Pro Asn Gln Ile Arg Arg Ile Met Ala Ala Ala Lys			
295	300	305	
ccc aag cac gac tgg acg agg tcc tac ttc cgg gcg tac atg atc ctc		1016	
Pro Lys His Asp Trp Thr Arg Ser Tyr Phe Arg Ala Tyr Met Ile Leu			
310	315	320	325
ctc ccc ttc tcg gag acg ttt ttc tac ctc agc tcg gtc atc aac ccg		1064	
Leu Pro Phe Ser Glu Thr Phe Phe Tyr Leu Ser Ser Val Ile Asn Pro			
330	335	340	
ctc ctg tac acg gtg tcc tcg cag cag ttt cgg cgg gtg ttc gtg cag		1112	
Leu Leu Tyr Thr Val Ser Ser Gln Gln Phe Arg Arg Val Phe Val Gln			
345	350	355	
gtg ctg tgc tgc cgc ctg cag cac gcc aac cac gag aag cgc		1160	
Val Leu Cys Cys Arg Leu Ser Leu Gln His Ala Asn His Glu Lys Arg			
360	365	370	
ctg cgc gta cat gcg cac tcc acc acc gac agc gcc cgc ttt gtg cag		1208	
Leu Arg Val His Ala His Ser Thr Thr Asp Ser Ala Arg Phe Val Gln			
375	380	385	
cgc ccg ttg ctc ttc gcg tcc cgg cgc cag tcc tct gca agg aga act		1256	
Arg Pro Leu Leu Phe Ala Ser Arg Arg Gln Ser Ser Ala Arg Arg Thr			
390	395	400	405
gag aag att ttc tta agc act ttt cag agc gag gcc gag ccc cag tct		1304	
Glu Lys Ile Phe Leu Ser Thr Phe Gln Ser Glu Ala Glu Pro Gln Ser			
410	415	420	
aag tcc cag tca ttg agt ctc gag tca cta gag ccc aac tca ggc gcg		1352	
Lys Ser Gln Ser Leu Ser Leu Glu Ser Leu Glu Pro Asn Ser Gly Ala			
425	430	435	
aaa cca gcc aat tct gct gca gag aat ggt ttt cag gag cat gaa gtt		1400	
Lys Pro Ala Asn Ser Ala Ala Glu Asn Gly Phe Gln Glu His Glu Val			

440

445

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